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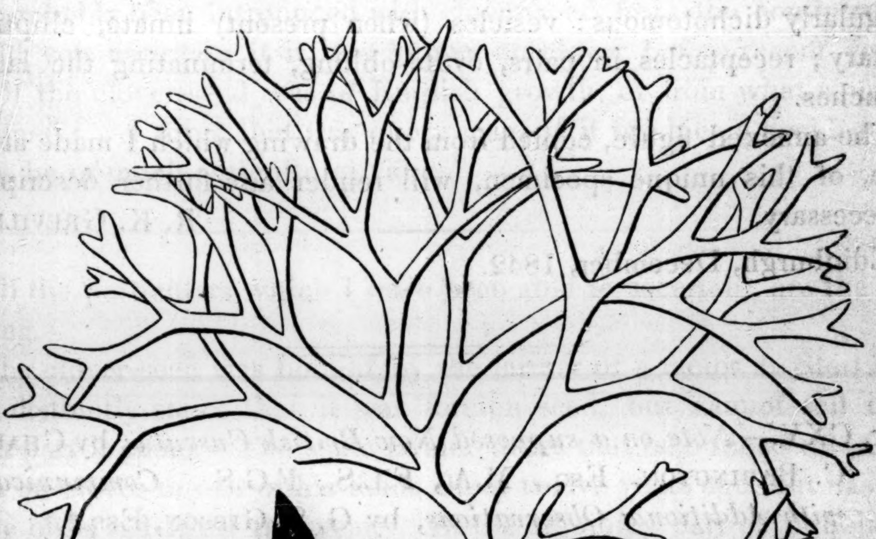
Art. CXIV. — *Note on Fucus Mackaii of Turner.*

By Robert Kaye Greville, Esq., LL.D.



Fucus Mackaii, Turner.

Fucus Mackaii, a species established in the absence of fructification by the acute Turner, is reduced by Agardh to a mere variety of F. nodosus; and, it must be confessed, not without apparently good reason. The plant occurs in its different localities in extraordinary profusion, and strongly resembles some states of F. nodosus, so closely indeed as scarcely to be distinguished from them. In the autumn of the present year I collected specimens of the latter plant, in Loch Ryan, which I thought conclusively established Agardh's view of the question. A few days afterwards, however, I was most agreeably surprised to observe in the collection of Mrs. Captain Maynard, at Stranraer, a specimen of Fucus Mackaii bearing receptacles; so that the doubts which have so long hung over this interesting plant, are now at an end.

The specimen (I regret to say it was a solitary one) was communicated to Mrs. Maynard by Dr. Lindsay from the Isle of Skye.

The specific character of Fucus Mackaii may now be expressed as follows. Frond coriaceous, cylindrical or subcompressed, linear, irregularly dichotomous: vesicles (when present) innate, elliptical, solitary; receptacles in pairs, ovate-oblong, terminating the lateral branches.

The annexed figure, copied from the drawing which I made at the time, of this unique specimen, will render any further description unnecessary. R. K. GREVILLE.

Edinburgh, December, 1842.

ART. CXV.—*Note on a supposed New British Cuscuta;* by CHARLES C. BABINGTON, Esq., M.A., F.L.S., F.G.S. *Communicated, with Additional Observations,* by G. S. GIBSON, Esq.*

I FULLY intended to forward C. C. Babington's notes on the Cuscuta (Phytol. 412), but have delayed doing so in the hope of obtaining clearer information as to the country from which the clover-seed came; but after considerable enquiry have not succeeded satisfactorily. The following are C. C. B.'s remarks upon it, any part of which you are of course at liberty to insert in 'The Phytologist.'

"I this morning received your letter, and immediately submitted the Cuscuta to the microscope. It certainly differs considerably from C. Epithymum, and I suspect will prove to be a new species, for I can find no notice of it in the continental works. I am not, however, prepared to give it as new, without more acquaintance with it than I have yet obtained. I believe that C. Epithymum is confined to shrubby plants, such as Ulex, Erica and Thymus. I add the character of the plant, according to my present ideas, and have underlined the points in which I believe it to differ from C. Epithymum.* The provisional name that I have adopted is C. Trifolii.

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* In a letter to E. Newman.

"*C. Trifolii*, (Bab. MSS.) Clusters of flowers bracteated, sessile: tube of the corolla cylindrical, *limb erect*, scales palmately cut, converging; *calyx nearly or quite as long as the corolla. Calyx* and corolla *whitish*, with acute segments.

"I had heard of a Cuscuta destroying the clover in Norfolk and Suffolk, but have never before been able to obtain specimens. I look upon it as very desirable that attention should be called to the plant, as it threatens to become a troublesome weed in fields, to which it has probably been introduced with clover-seed from the continent.—Could you ascertain if it was known on clover before recent years, and if the clover-seed was of English growth, or from what country obtained? I think that this query may, if it produce a decided answer, be of much agricultural value."

All the particulars which I have been able to ascertain, are the following.

The clover-seed was bought by the farmer of a factor at Stortford, who distinctly states that it was foreign seed, but cannot tell from what part it came. The same farmer states that he noticed this Cuscuta on clover in one of his fields about twelve years ago, but has not since observed it till this year. In the adjoining part of Suffolk, it was a troublesome weed in several places, covering the clover to a considerable extent, and greatly injuring the crop; this seed had been grown in England the previous year, and in this neighbourhood, but probably might have originally come from abroad, which I am anxious to ascertain, but fear the requisite information can scarcely now be obtained. Perhaps if the notice of the readers of 'The Phytologist' be called to the subject, some more satisfactory result may be arrived at. Should I hear any further particulars I intend to communicate them. G. S. Gibson.

Saffron Walden, 3rd of 1st Month, 1843.

[Mr. Babington requests us to add that he would be much obliged to any person who would send for examination specimens of Cuscuta from clover, addressed to him at St. John's College, Cambridge.]

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* These are the parts printed in *Italics*.—*Ed.*

ART. CXVI. — *Contributions towards a Flora of the Breadalbane Mountains.* By WM. GARDINER, JUN., Esq.

THE plants enumerated in the following list were collected between the 28th of June and the 19th of July, 1842, on that wild and rugged mountain range which extends along the shores of Loch Tay from Kenmore to Killin, and of which the mighty mass of Ben Lawers forms the most prominent feature, rising to an altitude of 4015 feet above the sea-level. At the base of this mountain a little inn has been most conveniently placed, from which to the summit the distance is reckoned about five miles, and is usually attained with less than three hours' moderate climbing. Once at the top, the toil is amply compensated, if the mist be absent, by the magnificent panorama of the "land of the mountain and the flood" that is spread around. There are many fine sights in Breadalbane: the splendid waterfalls at Aberfeldy, Acharn, Boreland and Lawers; —

> "Th' outstretching lake, imbosom'd 'mong the hills:"

the romantic grounds of Taymouth: —

> "The Tay meandering sweet in infant pride,
> The palace rising on his verdant side;"—

the quiet pastoral beauty of Glen Lochy, and the never-tiring picturesque scenery of Killin. But all these taken together fall short of producing such an interest as one feels while enjoying, in a clear sunny day, the vast prospect of alpine grandeur from the summit of Ben Lawers; and the tourist who neglects this sight, although he has beheld the rest, misses what is most worthy of being seen. To the botanist Ben Lawers has additional charms. He seldom climbs it in the prescribed period of three hours, for almost at every step, beauty, in some form or other, beckons him to stoop and examine its charms. His pleasure is not on the summit alone, and therefore to him the ascent is not so toilsome. He walks, as it were, through a botanic garden, each compartment, as he ascends its lofty terraces, presenting him with a fresh banquet of new and lovely forms, unknown to the plains, and as he takes leisure to enjoy them, the health-giving breezes circle round him. The mountain-bee with its merry hum leads him to many a hidden gem; and the babbling streams ever and anon are telling him of the floral treasures of their banks. He is diligent as the bee, happy as the sparkling stream. Yet no earthly happiness is without its alloy; and rambling on Ben Lawers, whether the tourist be botanist or not, he will meet with shady moments as well as bright ones. If the sun beats strong and the air is dry, his face gets tanned and his ears blistered. If the mist comes on, and he has no compass nor guide, he runs the risk of losing himself, and descending the wrong side of the mountain. If he is overtaken by a Highland shower, he is positively certain of being thoroughly drenched to the skin; and if he has lacked the foresight to provide a spare suit to exchange for his wet one on reaching his inn, his plight will be pitiful. Moreover, he will occasionally have the comfort of getting over the ancles in a bog, of being stung by an angry wasp, or of having his blood painfully abstracted in various ways by tiny demons in the shape of insects. Yet after all, these are but trifles when we look them lightly in the face, and consider what a vast amount of pure delight is derivable from the contemplation of Nature, either in her minute details of vegetable and animal structure, or in her more general features of landscape scenery.

Thalictrum alpinum. Plentiful on Ben Lawers and the other mountains in the Breadalbane range, growing on the marshy banks of rills, as well as on wet rocks.

——— *minus*, *β. majus.* On the banks of Loch Tay.

Anemone nemorosa and *Trollius europæus.* These two beautiful denizens of our woods, the one with its delicately-tinted drooping flowers, and the other with its swelling globes of vegetable gold, adorned the wild and lofty rocks of Stuich-an-Lochan, and were greeted with all the rekindled warmth of early friendship. Stuich-an-Lochan is a wild rocky mountain, rising almost perpendicularly from the dark waters of Loch-na-Gat, and connected with Ben Lawers, of which it is generally considered a part, by the yet more fearful cliffs of Craig-na-Hein. It is one of the richest botanical fields in Breadalbane.

Cochlearia grœnlandica. Plentiful about the summit of Ben Lawers, varying much in size, and in the colouring of the flowers and foliage.

Draba rupestris. In the crevices of rocks about the summit of Ben Lawers, but not in great quantity.

— *incana.* More or less abundant on the rocky summits of Ben Lawers, Stuich-an-Lochan, Mael Tarmanach, Mael Greadha, and Craigalleach; varying from two inches to nearly a foot in height.

Arabis hirsuta. On the rocks of Stuich-an-Lochan, in fruit.

Silene acaulis. Abundant on all the Breadalbane mountains, at a good elevation, forming here and there a beautiful sward, glowing with its myriad blossoms of vivid red.

Lychnis diurna. On Stuich-an-Lochan, showing another example of low-ground plants seeking a high altitude.

Spergula saginoides. Rocky banks on Ben Lawers and Stuich-an-Lochan.

Alsine rubella. Very sparingly on crumbling rocks, at the summits of Ben Lawers and Mael Greadha.

Cerastium alpinum. Scattered profusely over all the range, and varying considerably in its degree of pubescence.

Cherleria sedoides. Abundant, and often forming widely extended patches.

Geranium sylvaticum and ***pratense.*** Plentiful in various situations, high on the mountains as well as at their bases.

Oxalis Acetosella. Stuich-an-Lochan could also boast of this graceful little gem of Flora, which recalled one from the sultry heat of July, and these perilous alpine rocks, to the soft luxury of the woodland in the merry month of May.

Anthyllis Vulneraria. Ben Lawers and Stuich-an-Lochan.

Vicia sylvatica. Den of Lawers, below the Falls.

Dryas octopetala. A single specimen without flower was picked on Stuich-an-Lochan.

Geum rivale. This, which is another species common on low grounds, occurred frequently in marshy places among the rocks of Stuich-an-Lochan.

Rubus saxatilis. On the same mountain, but not common.

—— ***Chamæmorus.*** Abundant on the peat-bogs and moory ground of Ben Lawers, both in flower and fruit. The latter, which are called *Avrons* by the shepherds, are esteemed for their nutritious properties as well as for their agreeable flavour. I had good reason to prefer the name of *cloud-berries*, for my specimens were culled amid the fleecy drapery of the heavens that mantled the mountain in their misty folds.

Potentilla alpestris. Not uncommon on the rocky ledges of Stuich-an-Lochan.

Sibbaldia procumbens. On the summits of all the mountains.

Alchimilla alpina. Plentiful everywhere, from the bases to the summits of the mountains, but most luxuriant where its bunches of elegant silvery foliage depend from the crevices of a rock in the immediate vicinity of one of those beautiful miniature cascades that are so numerous on an alpine rivulet.

Epilobium angustifolium. Margin of the Lochy, near Killin, imparting to the banks of that still and beautiful stream a peculiarly interesting aspect of floral grandeur, from the richness of its numerous handsome spikes of crimson blossoms.

——— ***alpinum.*** Marshy banks of springs and rivulets on all the mountains, generally gracefully drooping both in flower and fruit.

Circæa alpina. Moist banks near the Falls of Lawers, and in stony places shaded by trees on the banks of Loch Tay.

Sedum anglicum. On a rocky bank near Lawers, but scarce.

—— ***villosum.*** Growing rather sparingly on a marshy bank by the side of a stream about half way up Ben Lawers. It was also picked on a wet wall by the wayside in Glen Almond.

—— ***Rhodiola.*** Crevices of moist rocks on most of the mountain summits, but not so luxuriant as I have found it among the Clova mountains.

Saxifraga stellaris. Plentiful both in wet and dry places, and varying from half an inch to four or five inches in height.

——— ***nivalis.*** More or less abundant on the summits of Ben Lawers, Stuich-an-Lochan, Mael Tarmanach, Mael Greadha, and Craigalleach, growing in the clefts of rocks. Some of it had simple stems, others branched; and more of it was in fruit than flower.

——— ***oppositifolia.*** Frequent in the crevices of rocks, but its early and elegant purple blossoms were nearly gone.

——— ***aizoides.*** The constant ornament of all the alpine rivulets, but preferring a very moderate altitude, and even descending to the bottoms of the vallies.

——— ***cernua.*** This, the rarest and most interesting of the tribe, was found where

I gathered it in 1838, in the crevices of rocks and among debris, in a wild ravine near the summit of Ben Lawers, but it is now getting so scarce there, that unless picked with a sparing hand for some years to come, it will be in danger of being eradicated.

Saxifraga hypnoides. Plentiful.

Cornus suecica. Only a few specimens were picked on Ben Lawers, growing among Rubus Chamæmorus, in small boggy hollows.

Galium palustre, β. *Witheringii*. In marshy places by the side of Loch Tay.

—— *boreale*. Plentiful on the banks of Loch Tay in stony places, as well as in the Den of Lawers, by the side of the Lochy, and even on the rocky ledges of the lofty Stuich-an-Lochan.

Thrincia hirta. On Stuich-an-Lochan.

Crepis paludosa. About the Falls of Lawers &c.

Hieracium murorum, γ. *Lawsoni*. Rocks of Stuich-an-Lochan.

——— *prenanthoides*. Den of Lawers, but little of it in flower.

Saussurea alpina. Frequent, though not plentiful, on the rocky shelves of Stuich-an-Lochan.

Carduus heterophyllus. Abundant in the Den of Lawers, on the banks of the Lochy, and various other places, some of its beautifully ciliato-dentate cottony leaves measuring more than a foot in length.

Gnaphalium dioicum. On the heaths, abundant.

——— *supinum*. In still greater profusion than the last, preferring bare earthy or dry rocky banks, and by no means confined to the summits of the mountains, but extending often to within a few hundred feet of their bases.

Erigeron alpinus. In tolerable plenty on the rocky ledges of Stuich-an-Lochan, generally with one flower, but occasionally with two or three.

Solidago Virgaurea, β. On the same mountain.

Vaccinium uliginosum. On boggy heaths about Loch-na-Gat, and several other places, but bearing no flowers.

Pyrola media. Picked a specimen or two about the Falls of Boreland in Glen Lochy, but past their prime.

Gentiana nivalis. A single specimen of this alpine rarity was culled on Stuich-an-Lochan, but several without flowers were left.

—— *campestris*. Plentiful on Ben Lawers.

Myosotis alpestris. On Ben Lawers and Stuich-an-Lochan in considerable abundance, gracing the rocks with its rich cærulean blossoms, than which none of our mountain flowers are more exquisitely beautiful.

Veronica serpyllifolia, β. *alpina*. In profusion in marshy places about springs and the sides of streams.

——— *saxatilis*. On the rocks of Stuich-an-Lochan and Craig-na-Hein, but in small quantity. This is a perfect gem, and its large, brilliant, though delicate corolla is well worth a long day's journey to look at.

Euphrasia officinalis. A variety with deep-coloured flowers and foliage was plentiful in the mountain-pastures, and in the valleys the usual pale-flowered state frequently attained a height of nearly a foot, with a more or less branched habit.

Melampyrum pratense and *sylvaticum*. In the Den of Lawers.

Digitalis purpurea. One of the most common and showy wild flowers in the Highlands.

Galeopsis versicolor. Common in the cornfields about Lawers.

Clinopodium vulgare. Banks of Loch Tay.

Armeria maritima, β. alpina. Summits of Ben Lawers and Stuich-an-Lochan.

Polygonum viviparum. Plentiful in the Den of Lawers, and in various places on the mountains.

Rumex alpinus. In waste places, Lawers, but without flowers this season. In 1838 I culled a specimen in the same locality, bearing flowers.

Oxyria reniformis. Abundant by the sides of the mountain streams.

Salix pentandra. In Glen Almond, with fertile catkins.

—— *reticulata.* Plentiful on the summits of all the mountains, loving best to grow on the sides of perpendicular rocks.

—— *arenaria.* By the sides of streams on Ben Lawers.

—— *cinerea.* About the falls of Boreland, the bank of Loch Tay, and by the side of Loch Frenchie in Glen Quech, varying very much in size and foliage.

—— *oleifolia.* Banks of Loch Frenchie.

—— *aurita.* Glen Quech.

—— *caprea.* Common in many places and very variable.

—— *Andersoniana.* Craigalleach, rare.

—— *tenuior.* Banks of the Lochy, near Killin, but not in great plenty.

—— *radicans* and *Weigeliana.*

—— *bicolor.* Plentiful about Loch Tay, and in Glen Quech, but without catkins.

—— *phyllyreifolia.* On the banks of Loch Tay near Lawers.

—— *herbacea.* Abundant on the rocky mountain summits, but finest on Stuich-an-Lochan.

Myrica Gale. In moory ground about the base of Ben Lawers, scenting the air with its rich and agreeable odour.

Tofieldia palustris. On Stuich-an-Lochan, Ben Lawers, Mael Tarmanach, &c.

Juncus trifidus. Near the summit of Ben Lawers, but poor starved specimens compared with those found at Clova.

—— *biglumis.* On Ben Lawers, Stuich-an-Lochan and Mael Greadha, but in very small quantity.

—— *triglumis.* Plentiful in marshy places on all the mountains, and varying with from two to four capsules.

Luzula spicata. In profusion on the rocky summits of all the Breadalbane range.

Narthecium ossifragum. In boggy places, common.

Gymnadenia conopsea. On Ben Lawers, frequent, and telling of its whereabouts by bribing the zephyrs with its aromatic breath.

—— *albida.* On grassy banks near Larich-an-Lochan.

Habenaria viridis. On Stuich-an-Lochan.

Anthoxanthum odoratum. This adventurous inhabitant of our meadows I found near the lofty summits of Ben Lawers and Craigalleach.

Phalaris arundinacea. On the banks of the Lochy.

Aira cæspitosa and *flexuosa.* Alpine states of these plants occurred on Ben Lawers and Craigalleach.

Melica uniflora. In the Den of Lawers.

Molinia cœrulea, β. alpina. On the banks of Loch Tay, and by the sides of streams on Ben Lawers.

Arrhenatherum avenaceum. Den of Lawers, &c.

Sesleria cærulea. On the rocky ledges of Craigalleach.

Poa alpina. Common on all the mountains, and viviparous.
— *nemoralis.* Banks of Loch Tay.
— *cæsia.* Rocks of Stuich-an-Lochan.
Festuca ovina, ε. vivipara. Frequent.
Avena alpina. Rocky ledges of Stuich-an-Lochan and Ben Lawers.
Eriophorum gracile. Ben Lawers. Evidently a dwarf and slender state of E. angustifolium.
Carex pulicaris. On Ben Lawers.
—— *curta.* Ben Lawers, &c.
—— *intermedia.* Near Ben Lawers Inn, in a marshy spot.
—— *atrata.* On the ledges of Stuich-an-Lochan, not uncommon.
—— *rigida.* Rocky summits of all the mountains.
—— *saxatilis.* In marshy places on Stuich-an-Lochan and Mael Greadha.
—— *flava, pallescens and paludosa.* Den of Lawers.
—— *capillaris.* Marshy places on Stuich-an-Lochan, Mael Greadha & Craigalleach.
Polypodium Phegopteris. Abundant in various places.
———— *Dryopteris.* Den of Lawers.
Polystichum Lonchitis. In the clefts of rocks on all the mountains, but the specimens not so luxuriant as those found on the Forfarshire mountains.
———— *lobatum.* Den of Lawers, near the Falls.
Lastræa Oreopteris. Plentiful in the Den of Lawers.
Cystopteris fragilis and *β. dentata.* On moist rocks about the Falls of Lawers.
Asplenium viride. Crevices of wet rocks about the Falls of Lawers, in great profusion. This beautiful little species loves to vegetate in the immediate vicinity of waterfalls, though in 1838 I found a few plants in the shady cleft of a rock near the summit of Ben Lawers.
Hymenophyllum Wilsoni. Moist rocks about the Falls of Lawers, covering them with broad patches of its beautiful and delicate fronds.
Botrychium Lunaria. On Stuich-an-Lochan, sparingly.
Lycopodium selaginoides, alpinum and *Selago.* Plentiful on Ben Lawers and others of the range.
Equisetum palustre, β. alpinum. On Ben Lawers and Craigalleach.
Andræa alpina. Abundant and in fine condition about the summits of Stuich-an-Lochan, Ben Lawers, Mael Tarmanach and Mael Greadha.
——— *rupestris* and *Rothii.* Ben Lawers.
Gymnostomum lapponicum. On Ben Lawers and Mael Tarmanach.
Anyctangium ciliatum. In the Den of Lawers and many other places, common.
Diphyscium foliosum. Ben Lawers.
Splachnum sphæricum. Ben Lawers.
——— *mnioides.* On the same and all the other mountains of the range.
Conostomum boreale. Abundant and in fine perfection near the summit of Mael Tarmanach, covering a space of several yards. Sparingly on the other mountains.
Encalypta ciliata and *rhaptocarpa.* More or less diffused over the whole range.
Weissia crispula. Ben Lawers, plentiful.
——— *acuta.* Wet rocks, common.
Didymodon rigidulus. Ben Lawers.
———— *capillaceus.* In dense tufts in the clefts of rocks, abundant. Var. *β. ithyphylla.* Wet rocks in the Den of Lawers.

Didymodon longirostris. Mael Tarmanach and Mael Greadha.

Trichostomum patens. Abundant on Ben Lawers.

———— ***canescens, microcarpon, aciculare*** and ***fasciculare.*** Ben Lawers.

———— ***polyphyllum.*** Rocks on the banks of Loch Tay.

Dicranum virens. Ben Lawers and Mael Gradha.

———— ***falcatum.*** In the greatest profusion on Ben Lawers.

———— ***Starkii.*** Ben Lawers, but much less common than the last.

———— ***flavescens.*** Sandy deposits by the sides of Lawers-burn.

———— ***scoparium, γ. fuscescens.*** Mael Tarmanach &c.

———— ***heteromallum*** and ***subulatum.*** Ben Lawers.

Cinclidotus fontinaloides. On stones in Loch Tay.

Polytrichum hercynicum. Frequent on all the mountains.

———— ***juniperinum, β. gracilius,*** (*P. strictum*, Menz.) In bogs on Ben Lawers.

———— ***septentrionale.*** On wet rocks near the source of a rivulet a little below the summit of Ben Lawers, on the north side, and new, I believe, to the district.

———— ***alpinum.*** The most common Polytrichum on the mountains, but most of my specimens were culled on the summit of Craigalleach, in the calm twilight of a summer's evening, after a day's laborious ramble over the whole range from Larich-an-Lochan. On the same spot (upwards of 3000 feet high) I last year had the misfortune to sprain my right ancle severely; and what I then suffered in the descent, and for two months after, would have cured many a one of botanizing for ever: but somehow or other, it only tended to increase my enthusiasm, and this prompted me in the present season to revisit that glorious mountain-altar, and there offer up to heaven grateful thanks for my recovery, and for the pure pleasure I continued to enjoy from the love of Nature's works.

Bryum trichodes. A single tuft near the summit of Ben Lawers.

———— ***julaceum.*** Falls of Lawers and banks of the Lochy, above the bridge, but in neither place bearing fructification.

———— ***crudum.*** Ben Lawers &c.

———— ***Zierii.*** Ben Lawers and Stuich-an-Lochan.

———— ***turbinatum.*** About the Falls of Lawers, hill of Kenmore, and other places.

———— ***nutans*** and ***elongatum.*** Ben Lawers.

———— ***ventricosum.*** Falls of Lawers, and about the Falls of Boreland in Glen-Lochy.

———— ***demissum.*** Mael Greadha, rare.

———— ***punctatum.*** In many places.

Bartramia pomiformis, β. major. Den of Lawers.

———— ***ithyphylla.*** On all the mountains.

———— ***gracilis.*** In fructification on Ben Lawers, Stuich-an-Lochan and Mael Tarmanach.

———— ***fontana.*** In bogs on most of the mountains, varying much in size. Some of the Ben Lawers specimens much elongated and elegantly slender.

Hedwigia æstiva. Plentiful but mostly barren. I last year culled it in fructification by the side of Fionlarig-burn on Craigalleach, and near a small waterfall in Glen Ogle.

Pterogonium filiforme. Abundant on the whole Breadalbane range, but barren.

Anomodon curtipendulum. Upon rocks in the woods of Glen Lochy, bearing fructification copiously.

Hypnum denticulatum, β. obtusifolium. Ben Lawers and other mountains.

Hypnum trifarium. This rare moss I found in a marshy spot near the summit of Ben Lawers, intermingled with H. scorpioides.

—— *moniliforme.* On Mael Greadha, sparingly.

—— *catenulatum.* Found while searching among the dark rocks of a *corrie* near the summit of Ben Lawers, on the west side, for H. Halleri. The latter eluded my search, but no wonder, for at the time the gloom and roar of a thunder-storm were over my head, and the hail seemed determined to pelt me off the ground.

—— *rufescens.* In broad flat patches on the moist rocks about the Falls of Lawers, and on Craigalleach.

—— *lutescens.* In several places, but barren.

—— *stellatum.* Falls of Lawers.

—— *rugulosum.* In broad masses on the rocky shelves of Craig-na-Hein.

—— *commutatum.* About the Falls of Lawers bearing capsules in profusion.

Marchantia hemisphærica. Abundant on the mountains, particularly on the rocky banks of streams.

Jungermannia furcata. Glen Lochy.

—— *spinulosa.* Falls of Lawers &c. bearing calyces.

—— *pumila.* Ben Lawers, in fruit.

—— *crenulata.* Ben Lawers.

—— *emarginata.* On all the mountains and extremely variable, some of it with calyces and fruit.

—— *inflata, excisa, nemorosa* and *β. purpurascens.* On Ben Lawers &c.

—— *undulata, albicans, Taylori, barbata* and *trilobata.* Ben Lawers.

—— *juniperina* and *julacea.* Plentiful on most of the mountains.

—— *platyphylla, β. major.* Glen Lochy.

—— *ciliaris.* Ben Lawers, &c.

Endocarpon miniatum. Wet rocks on the West Maelor, a secondary hill on the south ascent of Ben Lawers.

Lecidea geographica, fusco-lutea and *marmorea.* On Ben Lawers.

Lecanora ventosa and *tartarea.* On rocks, Ben Lawers.

Squamarea hypnorum. On earth and decayed mosses, Ben Lawers &c.

Parmelia caperata. Plentiful on old walls about Lawers.

—— *saxatilis* and *omphalodes.* On rocks and walls, common.

—— *Fahlunensis.* Rocks about the summits of Ben Lawers and Stuich-an-Lochan, but little of it in fructification.

Sticta pulmonaria. On trunks of trees in the woods of Fionlarig.

—— *scrobiculata* and *fuliginosa.* On rocks in the woods, Glen Lochy.

Collema cheileum. Trunks of trees at Lawers.

Solorina crocea. Ben Lawers, on the summit as well as near the base.

—— *saccata.* Den of Lawers below the falls.

Peltidea aphthosa and *scutata?* Ben Lawers.

Gyrophora cylindrica, proboscidea and *pellita.* Rocks, Ben Lawers, principally towards the summit.

Cetraria glauca. Rocks, Ben Lawers.

—— *Islandica.* On boggy heaths near Loch-na-Gat, very luxuriant.

Ramalina fraxinea, fastigiata and *farinacea.* On trees, plentiful.

Alectoria jubata, β. chalybeiformis. On several of the mountain rocks.

Cornicularia aculeata, tristis and *lanata.* On Ben Lawers and Stuich-an-Lochan, the two latter species with apothecia.

Sphærophoron coralloides. In Glen Lochy and many other places, and bearing fructification on the rocks near the summit of Ben Lawers.

——— ——— *β. cæspitosum.* On Ben Lawers.

Stereocaulon paschale, and what is usually called *botryosum.* On Ben Lawers &c., plentifully, but both so variable in form, and these forms so running into each other, that one is doubtful whether they may not after all constitute but one species.

Cladonia uncialis and *β. turgida.* Not uncommon on most of the mountains.

Scyphophorus cocciferus, gracilis, and several others, on Ben Lawers.

Pycnothelia Papillaria. On the same mountain, but rare.

WILLIAM GARDINER, JUN.

Dundee, December, 1842.

ART. CXVII.—*County Lists of the British Ferns and their Allies.* Compiled by EDWARD NEWMAN.

(Continued from p. 455)

LANCASHIRE.

Lomaria Spicant. Common; *S. Gibson, W. Wilson, G. Pinder, J. Sidebotham, J. B. Wood:* near Liverpool, *S. Thompson:* abundant on moors near Lancaster, *S. Simpson:* common near Coniston, in wet gravelly situations, *M. Beever:* I am indebted to Miss Beever for magnificent specimens of this plant; they are of extraordinary size, and combine the characters of the fertile and barren fronds, *E. Newman.*

Pteris Aquilina. Common, *S. Gibson, G. Pinder, J. Sidebotham, J. B. Wood:* found in a very diminutive state, not exceeding three inches in length, upon the garden-wall at Knowsley, in 1840, *W. Wilson:* Penketh, *S. Thompson:* very common near Lancaster, *S. Simpson:* common near Coniston, *M. Beever.*

Allosorus crispus. Cliviger, in endless variety. Mr. Francis says that the sori are placed in lines along the transverse veins: I find them in dots at the termination of the veins, with the edge of the pinnule more or less turned over, forming a cover, sometimes however they are quite bare, and when in that state the plant might be considered a true Polypodium. Mr. Newman has observed that the character which distinguishes this plant from a true Polypodium, is that the fronds are both barren and fertile; but I find, that in common with all other Polypodia, it possesses not only barren and fertile fronds, but barren and fertile pinnæ on the same frond, and even barren and fertile pinnulæ on the same pinna, *S. Gibson:* near Lancaster, on the way to the Asylum, *W. Wilson:* Coniston, Old Man mountain, *G. Pinder:* among the rocks at Cliviger-dean, five miles from Todmorden, on the road to Burnley, (R. Leyland), *H. C. Watson:* Todmorden (J. W. G. Gutch), *H. C. Watson:* Fo-edge, near Bury, abundant, *J. Sidebotham:* abundant on moors near Lancaster, *S. Simpson:* common near Coniston, *M. Beever:* this beautiful species grows in immense profusion at Fo-edge, six miles N. W. of Bury; it also occurs on the hills near Rochdale, but I do not know the exact locality, *J. B. Wood.*

Polypodium vulgare. On old walls in many places, *S. Gibson, W. Wilson, S. Thompson:* common near Coniston, *M. Beever:* very common near Lancaster, *S. Simpson:* common on rough ditch-banks, and at the roots of trees in woods; the variety *acutum* of Francis occurs at Sale, six miles from Manchester, *J. B. Wood*: generally distributed near Manchester, but not common; the var. *acutum* found growing with its common state, *J. Sidebotham.*

Polypodium Phegopteris. Dulesgate, near Todmorden, *S. Gibson*: near Lancaster, beyond the Asylum; Dean-church clough, near Bolton (John Martin), *W. Wilson*: Fox-clough, near Colne; Padiham-brook, near Whalley; Old Man mountain, *G. Pinder*: Mere-clough, Cotteril-clough, *J. Sidebotham*: near Lancaster, *S. Simpson*: common near Coniston, *M. Beever*; this is not an uncommon species in the neighbourhood of Manchester, being found in several of our woods, as Mere-clough, Phillip's wood, near Prestwick, Boghart-hole clough, generally very fine and luxuriant, *J. B. Wood.*

Polypodium Dryopteris. Broad-bank, near Colne; Mr. Francis observes that the sori remain perfectly distinct, but I have found them confluent, *S. Gibson*: Dean-church clough (John Martin), *W. Wilson*: Marsden near Colne, and Padiham-brook, *G. Pinder*: Mere-clough and Cotteril-clough, *J. Sidebotham*: near Lancaster, *S. Simpson*: common near Coniston, *M. Beever*: more rare than P. Phegopteris, although found in three or four localities, as Mere-clough, Ashworth-wood &c., *J. B. Wood.*—Var. *rigidum*, mihi: Broad-bank, near Colne: this variety is sometimes taken for P. calcareum, *S. Gibson.*

Polypodium calcareum. Broad-bank and Sheden-clough. Mr. Francis has incorrectly given my name as an authority for this species being found near Lancaster; and in Mr. Watson's 'Notes on the Geographical Distribution of British Ferns,' this species is said to affect lime rocks, but the Lancashire localities are on the gravel which overlies the coal-formation, and it therefore cannot be said to be a limestone plant, *S. Gibson*: near Lancaster (— Gibson to R. B. Bowman),* Sheden-clough, three miles from Burnley (R. Leyland to Jas. Macnab), *H. C. Watson.*

Cystopteris fragilis. Broad-bank, *S. Gibson*: Wycottar-hall, walls near Colne and Clitheroe, *G. Pinder*: rare near Coniston, occasionally met with on the Old Man mountain, and the adjoining fells, more plentifully about the slate-quarries in Tibberthwaite, where it has the character of C. angustata, *M. Beever*: near Lancaster, *S. Simpson.*

Cystopteris dentata. Broad-bank, *S. Gibson*: Lymm-eye lock, between Warrington and Manchester, *W. Wilson.*

Cystopteris angustata. Cliviger, *S. Gibson.*

Cystopteris alpina. Ditto. *C. regia.* Broad-bank. All these forms of Cystopteris are common in the neighbourhood of Burnley, together with others perhaps quite as distinct: how far they may be considered species, I leave to the better judgment of others; *S. Gibson.*

Polystichum aculeatum. Sheden-clough, near Todmorden, *S. Gibson*: Fearnhead, near Warrington; Newton, *W. Wilson.*

Polystichum angulare. Marple-wood, *J. Sidebotham*; rare near Coniston, *M. Beever.*

Polystichum lobatum. Burton-wood &c. near Warrington, *W. Wilson.* Houghend-clough, not common, *J. Sidebotham*: margin of Black-beck and above Brantwood;

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* The discrepancy complained of by Mr. Gibson again occurs; I imagine the Mr. Gibson referred to by Mr. Francis, and again by Mr. Watson, is not Mr. S. Gibson of Hebden Bridge.

M. Beever; a plant of rare occurrence, met with however at Cotteril-clough, Bamford-wood, and one or two other places, *J. B. Wood.*

Lastræa Oreopteris. Walsden, and near Todmorden, *S. Gibson*: near Warrington, Woolston, &c., *W. Wilson*: abundant, *G. Pinder*: generally distributed near Manchester, *J. Sidebotham*: Penketh, and many places about Liverpool, by the men employed in the Botanic Garden, *S. Thompson*: near Lancaster, *S. Simpson*: very abundant near mountains and streams in the neighbourhood of Coniston, *M. Beever.*

Lastræa Filix-mas. Common, *S. Gibson, W. Wilson, J. Sidebotham, J. B. Wood*; the variety figured in Newman's 'British Ferns,' p. 52, occurs at Rotten-clough near Todmorden, *S. Gibson*: near Liverpool, *S. Thompson*: near Lancaster, very common, *S. Simpson*: common near Coniston, also the serrated variety, *M. Beever.*

Lastræa rigida. Top lock of Lancaster and Kendal canal (Rev. Thos. Smythes), *W. Wilson*: sparingly on the confines of the county, adjoining Westmoreland, *S. Simpson.*

Lastræa dilatata. Common in many parts of the county, *S. Gibson*: frequent, *W. Wilson*: very common, *J. Sidebotham*: near Liverpool, *S. Thompson*: near Lancaster, *S. Simpson*: near Coniston, *M. Beever*: extremely abundant, *J. B. Wood.*

Lastræa spinulosa. Abundant on the borders of Risley-moss, near Warrington, growing in company with L. dilatata, from which it is so strikingly different in habit as to compel the opinion that it must be distinct, *W. Wilson*: Langdale in the lake district, *G. Pinder*: Lever's Hulme, the only locality I know of near Manchester, *J. Sidebotham*: near Lancaster, *S. Simpson*: this beautiful and interesting fern, which I must certainly still consider as specifically distinct from L. dilatata, is found in only one locality in this neighbourhood (Broughton, Manchester), in an old alder-swamp at Lever's Hulme; it is intermixed with its more common ally, and when thus seen growing together the difference in their habit is remarkably striking: it approaches most to L. cristata, *J. B. Wood.*

Lastræa dumetorum. Cliviger, four miles from Burnley, *S. Gibson.*

Athyrium Filix-femina. Common in many places, *S. Gibson*: frequent; a variety grows on Risley-moss, with more rigid habit, *W. Wilson*: common, *G. Pinder*: very common near Manchester, *J. Sidebotham*: near Coniston, *M. Beever.*

Athyrium irriguum. Sheden-clough, *S. Gibson*: near Coniston, *M. Beever.*

Asplenium Adiantum-nigrum. Broad-bank and Sheden-clough, *S. Gibson*: Winwick, near Warrington, *W. Wilson*: I am acquainted with but one locality, the canal wall near Marple, *J. Sidebotham*: very common near Lancaster, *S. Simpson*: very local near Coniston, and in small quantities, *M. Beever.*

Asplenium Ruta-muraria. Broad-bank, *S. Gibson, W. Wilson*: Colne and Clitheroe, *G. Pinder*: Hough-end Hall, common near Mottram, *J. Sidebotham*: West Derby, *S. Thompson*: very common near Lancaster, *S. Simpson*: on the Shepherd's Bridge in Yew-dale, the only locality I am acquainted with, *M. Beever*: very local, occurring on stone walls in two or three places, *J. B. Wood.*

Asplenium marinum. In 1828 I found this species sparingly on a stone by the side of the river, about two miles from Liverpool on the way to Runcorn, *S. Gibson*: a variety still grows in Winwick Stone Delf, where it never attains any considerable size; when fully developed by cultivation in a greenhouse, the pinnules are much shorter and rounder than those of maritime plants under the same treatment. I have not seen this species at Knot's Hole near Liverpool, but it is plentiful there according to Mr. T. B. Hall, see 'Flora of Liverpool;' *W. Wilson*: it is still in existence in

Winwick stone-quarry, near Warrington: my friend Mr. Wilson brought me two small roots from that locality a short time since, for cultivation; it is never more than two or three inches high, and the pinnules are singularly cuneate and strongly crenate on their edges, very much resembling the Killarney plant (figured Newman's 'British Ferns,' 76); it produces seed in abundance; *J. B. Wood:* I am indebted both to Mr. Wilson and Dr. Wood for specimens from Winwick, and can bear witness to the accuracy of Dr. Wood's remark on their similarity to the Killarney specimens, *E. Newman:* the Dingle near Liverpool (T. B. Hall), *H. C. Watson;* Knot's Hole, the Dingle, *S. Thompson;* Heysham and Silverdale, *S. Simpson.*

Asplenium Trichomanes. Kant-clough, near Burnley, *S. Gibson:* near Burton, north of Lancaster, *W. Wilson:* Marsden, Clitheroe, and Stoneyhurst college-walls, *G. Pinder:* Greenfield, *J. Sidebotham:* near Lancaster, common, *S. Simpson:* common near Coniston, *M. Beever;* this is very sparingly distributed in the neighbourhood of Manchester, and is always very dwarf and poor, *J. B. Wood.* Var. *β. incisum.*—Kant-clough, near Burnley, *S. Gibson.*

Asplenium viride. Dulesgate; it is said to grow in the quarries at Staley, but I have not seen it, *J. Sidebotham.* Var *β. ramosum;* Dulesgate, Var. *γ. laciniatum,* mihi, frond deeply laciniated. Dulesgate, *S. Gibson.*

Scolopendrium vulgare. Sheden-clough, Kant-clough and other places, *S. Gibson:* Burton-wood, Fearn-head &c., near Warrington, *W. Wilson:* common, *G. Pinder:* not uncommon, Arden-hall moat, coal-pits about Arden Marple, and the variety *crispum* is found in Cotteril-clough, *J. Sidebotham:* Penketh, *S. Thompson:* only once found near Coniston in 1841, on the wall of a water-course near Tent-lodge, *M. Beever;* Bamford-wood near Manchester, *J. B. Wood.*

Ceterach officinarum. Near Kellet, north of Lancaster; I have credible information also that it grows near West Houghton, *W. Wilson:* a single plant in the Liverpool botanic garden, from Club-moor, three miles from Liverpool, *S. Thompson:* near Lancaster, *S. Simpson.*

Hymenophyllyum Wilsoni. Thevilly near Burnley, *S. Gibson:* Old Man mountain, *G Pinder, M. Beever:* sparingly in caves at Greenfield, *J. Sidebotham:* near Lancaster, very common, *S. Simpson;* Rake-hey Common, near Todmorden (R. Leyland), *H. C. Watson;* on hills near Bury, *J. B. Wood.*

Hymenophyllum Tunbridgense. Cliviger, *S. Gibson:* sparingly in caves at Greenfield, *J. Sidebotham:* Coniston, *S. Simpson.*

Osmunda regalis. Chilburn, near Todmorden, *S. Gibson:* Risly-moss and in a lane near Orford, one mile from Warrington, *W. Wilson:* Little Langdale, in the lake district, *G. Pinder:* sparingly at Bowden-moss, *J. Sidebotham:* near Lancaster, *S. Simpson;* near Coniston, in boggy situations, *M. Beever;* Heysham (J. Tatham to Bot. Soc. Lond.), *H. C. Watson;* not unfrequent in bogs, Chat-moss; in the neighbourhood of Southport I observed this "royal fern" to be very abundant, and attaining a most immense size, many plants exceeding ten feet in height, *J. B. Wood.*

Botrychium Lunaria. Chilburn, *S. Gibson:* near Newton, Southport (Dr. Wood), *W. Wilson:* common in the upland pastures about Oldham, very fine and luxuriant at Reddish, *J. Sidebotham:* near Lancaster, *S. Simpson;* on the common between Bootle and Crosby, ? called Seaforth Common, *H. C. Watson;* a common plant on our neighbouring hills, *J. B. Wood.*

Ophioglossum vulgatum. *S. Gibson:* Woolstone and Gate-wharf, near Warrington, *W. Wilson:* rather common in Reddish-vale, meadows near the river Tame &c.,

Worsley (T G Rylands), *S. Thompson:* near Lancaster, *S. Simpson;* in a field near Coniston old hall, *M. Beever;* near Crosby, *H. C. Watson;* common near Manchester, *J. B. Wood.*

Lycopodium clavatum. Near Coniston, *M. Beever;* Todmorden valley; hills very generally, *G. Pinder;* Greenfield, Fo-edge, *J. Sidebotham;* rare near Manchester; more common on the elevated moors, *J. B. Wood.*

Lycopodium alpinum. Near Coniston, *M. Beever;* near the Holme, about five miles from Burnley, (Mr. Woodward); moors above the scouts near Burnley, (Rev. W. Wood); Coniston fells, (Mr. Davey); *Turner and Dillwyn*, 372: Greenfield, *J. Sidebotham;* Fo-edge near Bury, *J. B. Wood.;* Cliviger, at a very low elevation, barren, *W. Wilson.*

Lycopodium selaginoides. Near Coniston, *M. Beever;* on the common between Bootle and Crosby, *H. C. Watson;* shore at Southport, *W. Wilson.*

Lycopodium Selago. Near Coniston, *M. Beever;* White-moor near Colne, *G. Pinder;* Fo-edge near Bury, *J. Sidebotham;* Fo-edge and Mottram, *J. B. Wood;* Cliviger, *W. Wilson.*

Isoetes lacustris. Near Coniston, *M. Beever.*

Equisetum hyemale. Very rare; I believe it is to be found in small quantities in Mere-clough near Manchester; I have not seen it, but can rely on the authority of the individual who did gather it, *J. B. Wood.*

Equisetum variegatum. Bootle and Southport, *W. Wilson, S. Gibson.*

Equisetum arvense. Near Coniston, introduced? *M. Beever;* common near Manchester, *J. Sidebotham;* Prestwick, *H. C. Watson;* far too common, *J. B. Wood.*

Equisetum sylvaticum. The copper-mine near Coniston, *M. Beever;* common near Manchester, *J. Sidebotham;* Scorton (S. Simpson to Bot. Soc. Lond.), *H. C. Watson;* most abundant in woods, thickets and open pastures, *J. B. Wood.*

Equisetum palustre. Near Coniston, *M. Beever;* common near Manchester, *J. Sidebotham, J. B. Wood;* sands near Little Crosby, near Manchester, *H. C. Watson.*

Equisetum limosum. Near Manchester, *J. Sidebotham, H. C. Watson;* many of the "pits" near Manchester are completely choked up with it, *J. B. Wood.*

Equisetum fluviatile. Common near Manchester, *J. Sidebotham;* very abundant in swampy woods, *J. B. Wood.*

CHESHIRE.

Lomaria spicant. *W. Wilson, H. C. Watson.*

Pteris Aquilina. *W. Wilson, H. C. Watson;* Bidston-hill &c., abundant, *S. Thompson.*

Polypodium vulgare. A serrated variety near Frodsham, *W. Wilson, H. C. Watson;* between Woodside and Bidston, abundant, *S. Thompson.*

Polypodium Phegopteris. Werneth, *J. Sidebotham;* Mow-cop, *G. Pinder.*

Polypodium Dryopteris. Two miles south of Warrington, attaining a very large size, *W. Wilson.*

Cystopteris fragilis. Extremely rare, I know of but one locality, Rostherne Church, *J. B. Wood, J. Sidebotham.*

Cystopteris dentata. Rostherne Church, *W. Wilson.*

Polystichum aculeatum. Very local, Marple woods, *J. B. Wood.*

Polystichum angulare. Two miles south of Warrington, in a dingle, growing in company with Polypodium Dryopteris, *W. Wilson;* plentiful in Marple wood, *J. B. Wood.*

Lastræa Thelypteris. Newchurch-bog, near Over, where it bears fruit plentifully, Pelty-pool, also near Over; Knutsford-moor and Rostherne-mere, *W. Wilson, J. B. Wood;* Rostherne-mere, where it bears fruit only in very fine seasons, as 1842, *J. Sidebotham;* Wybunbury-bog, *G. Pinder.*

Lastræa Oreopteris. *W. Wilson.*

Lastræa Filix-mas. *W. Wilson, H. C. Watson, S. Thompson.*

Lastræa cristata. Wybunbury-bog; I should be sorry should this notice lead to its extermination, *G. Pinder;* I am indebted to Mr. Pinder for specimens, they are identical with those from Norfolk, *E. Newman.*

Lastræa dilatata. *W. Wilson;* Eastherne-wood, abundant, *S. Thompson.*

Lastræa spinulosa. Newchurch-bog, Pelty-pool and Knutsford-moor, *W. Wilson;* Wybunbury-bog, *G. Pinder.*

Athyrium Filix-femina. *H. C. Watson;* attains a very great size in the Dingle, two miles south of Warrington, *W. Wilson;* lanes about Bidston, *S. Thompson.*

Asplenium Adiantum-nigrum. *H. C. Watson, W. Wilson;* Between Woodside and Oxton, very fine, *S. Thompson.*

Asplenium Ruta-muraria. *W. Wilson;* Red and Yellow Noses, *S. Thompson.*

Asplenium marinum. On the rocks called the Red Noses, at New Brighton, *W. Wilson, H. C. Watson;* on the rocks of Hilbre island at the mouth of the river Dee, on the coast of Cheshire, this species is met with in great quantities, *J. B. Wood.*

Asplenium Trichomanes. Unfrequent; I have seen it only in the Well at Beeston, *W. Wilson.*

Scolopendrium vulgare. *W. Wilson, H. C. Watson;* near the toll-gate between Woodside and Bidston, *S. Thompson;* Cotterill-wood and Arden-hall, *J. B. Wood.*

Osmunda regalis. Wybunbury-bog, Smethwick, near Congleton, *G. Pinder;* sparingly at Baguley-moor, *J. Sidebotham;* Carrington-moss, *J. B. Wood.*

Botrychium Lunaria. Near Over it attains a great size, and is often branched, *W. Wilson;* Alderley-edge (Rev. Isaac Bell), *H. C. Watson:* sand-hills between Egremont and New Brighton, found abundantly in 1841 by H. E. Robson, *S. Thompson;* when botanizing near Over with my valued friend Mr. Wilson, in June, 1842, I met with some singular deviations in this interesting plant; one specimen had no less than four fertile branches and two barren ones, springing from a common stem; on several of the pinnules of the barren frond were a number of thecæ, some on their plain surface, others on their edges; many specimens had two fertile fronds generally of unequal size; they were growing in a meadow on a small declivity, in company with Habenaria chlorantha, *J. B. Wood.*

Ophioglossum vulgatum. *W. Wilson;* Davenport and Summerfield, *G. Pinder;* Alderly and Tranmere, *H. C. Watson.*

Lycopodium clavatum. Delamere forest, *W. Wilson.*

Lycopodium inundatum. Oak-mere and Baguley-moor, *W. Wilson.*

Lycopodium Selago. Risly-moss near Warrington, *W. Wilson.*

Pilularia globulifera. Bartington-heath &c. *W. Wilson.*

Equisetum hyemale. Lally's wood near Over, *W. Wilson.*

Equisetum variegatum. Sands at New Brighton, *H. C. Watson.*

Equisetum palustre. *H. C. Watson;* very abundant; the variety *polystachion* was gathered in some plenty by the sides of the embankment of the Sheffield railway near

Godley, during the last summer; in all the specimens I have seen the terminal catkin of the main stem was present, thus clearly proving that the proliferous condition is not dependent on the accidental circumstance of the top of the plant having been cropped or destroyed, an opinion very generally prevailing among botanists, *J. B. Wood.*

Equisetum limosum. *H. C. Watson.*
Equisetum arvense. *H. C. Watson.*
Equisetum sylvaticum. *H. C. Watson;* rather frequent, *W. Wilson.*
Equisetum fluviatile. *H. C. Watson.*

It is intended to give the lists for Staffordshire, Warwickshire and Worcestershire, in the March Phytologist: further information respecting these counties is particularly solicited.

EDWARD NEWMAN.

(To be continued).

ART. CXVIII. — *Some Account of the Botanical Collections recently made by Dr. Theodore Kotschy (for the Wurtemburg Botanical Union) in Nubia and Cordofan.* Communicated by MR. WM. PAMPLIN, jun.

(Continued from p. 459).

Umbelliferæ.
Coriandrum sativum, *L.*
Terebinthaceæ.
Balsamodendron Kafal, *Fors*
Papilionaceæ.
A.—*Loteæ.*
Lotus nubicus, *Hchst.*
arabicus, *L.* [*Perr.*
Cyanopsis senegalensis, *Gui.*
Trigonella hamosa, *L.*
Tephrosia leptostachys, *Can.*
uniflora, *Pers.*
anthylloides, *Hochst.*
cordofana, *H.*
Kotschyana, *Hochst.*
linearis, *Perr.*
Sesbania filiformis, *Gll. Perr*
pachycarpa, *Gll. Perr.*
punctata, *Pers.*
tetraptera, *Hochst.*
B.—*Fabaceæ.*
Kennedya arabica, *H. St.*
Rhynchosia Memnonia, *Ca.*
Dolichos angustifolius, *Vhl.*
Dolichos No. 218.
obliquifolius, *Schnizl.*
No. 288.
hastæfolius, *Schnizl.*
Cajanus flavus, *Cand.*
monstrosus
Clitoria Ternatea, *L.*
Indigofera diphylla, *Vert.*
deflexa, *Hochst.*
coidifolia, *Roth.*
senegalensis, *Lam.*
var. latifolia
paucifolia, *Del.*
viscosa, *Lam.*
oligosperma, *Cand.*
astragalina, *Cand.*
var. melanosperma, *C.*
argentea, *L.*
var. polyphylla
strobilifera, *Hochst.*
Anil, *L.*
var. orthocarpa, *Cand.*
semitrijuga, *Forsk.*
aspera, *Pers.*
C.—*Hedysareæ.*
Æschynomene macropoda,
[*Guill. Perr.*
Onobrychis arabica, *Hochs.*
Alyssicarpus vaginalis, *H.*
rugosus, *Hochst.*
Cassieæ.
A.—*Genisteæ.*
Requienia obovata, *Cand.*
Crotalaria macilenta, *Sm.*
lupinoides, *Hochst.*
podocarpa, *Cand.*
microcarpa, *Hochst.*
atrorubens, *Hchst.*
sphærocarpa, *Per.* var
angustifolia
thebaica, *Cand.*
B.—*Genuinæ.*
Bauhinia parvifolia, *Hoch.*
tamarindacea, *Del.*
Cassia acutifolia, *Del.*
Tora, *L.*
obovata, *Collad.*
Absus, *L.*

Cassia rhachyptera, *Hochst.*
Chamæfistula Sophora, *G.*
Mimoseæ. [*Don.*
Neptunia stolonifera, *G. P.*
Mimosa Habbas, *Del.*
Acacia No. 294 =
A. sericocephala, *Fenzl.*
No. 295, =
Inga floribunda, *Fenzl.*
papyracea, *Hochst.*
Corniculatæ.
B.—*Saxifrageæ.*
Vahlia Weldenii, *Rchb.*
cordofana, *Hochst.*
Portulacaceæ.
A.—*Paronychieæ.*
Polycarpæa glabrifolia, *Cnd.*
rutila, *Fenzl.*
linearifolia, *Cand.*
Mollugo bellidifolia, *Ser.*
Cerviana, *Ser.*
Arphorsia memphitica, *Fnzl*
B.—*Polygoneæ.*
Ceratogonum atriplicifolium
C.—*Portulaceæ.*
Trianthema sedifolium, *Vis.*
polyspermum, *Hochst.*
pentandrum, *L.*
salsoloides, *F.*
chrystallinum, *Vahl.*
Portulaca oleracea, *L.*
Aizoideæ.
A.—*Atripliceæ.*
Chenopodium murale, *L.*
Limeum viscosum, *Fenzl.*
Amaranthus polygamus, *L.*
= angustifol. *M.B.*
Celosia argentea, *L.*
trigyna, *L.* (nec. var.)
Aërva tomentosa, *Forsk.*
brachiata, *Mart.*
Digera arvensis, *Forsk.*
Desmochæta flavescens, *Cnd*
Achyranthes argentea, *Lam.*
Alternanthera nodiflora, *Br.*
Pongatium indicum, *Lam.*
B.—*Genuinæ.*
Gieseckia rubella, *Hchst.*
Gieseckia pharnacioides *L.*
Rosaceæ.
Potentilla supina, *L.*
Onagreæ.
A.—*Jussieuæ.*
Jussieua nubica, *Hochst.*
Isnardia lythrarioides, *H.*
C.—*Myrobalaneæ.*
Poivrea aculeata, *Cnd.* var.
subinermis
Guiera senegalensis, *Lam.*
Terminalia Brownei, *Fres.*
Lythrarieæ.
B.—*Lythreæ.*
Bergia suffruticosa, *Fenzl.*
verticillata, *W.*
peploides, *Guill. Per.*
erecta, *Guill. Perr.*
Ammannia ægyptiaca, *W.*
attenuata, *Hochst.*
Lawsonia alba, *Lam.*
Tetradynamæ.
Senebiera nilotica, *Cand.*
Farsetia ramosissima, *Hch.*
stenoptera, *Hochst.*
Nasturtium palustre, *Cand.*
Morettia philæana, *Cand.*
Pteroloma arabicum, *St.Hc.*
Capparideæ.
Cleome chrysantha, *Dec.*
Polanisia orthocarpa, *Hch.*
Roscia octandra, *Hchst.*
Cadaba glandulosa, *Forsk.*
farinosa, *F.*
Capparidea, sinc flor. et fr.
Violaceæ.
Ionidium rhabdospermum, *H*
Rutaceæ.
A.—*Euphorbiaceæ.*
Euphorbia thymifolia, *Frsk.*
granulata, *Vahl.*
hypericifolia, *L.* var.
angustif. et pubesc.
acalyphoides, *Hochst.*
convolvuloides, *H.*
polycnemoides, *H.*
Chamæsyce, *L.*
Dalechampia cordofana, *H.*
Mercurialis alternifolia, *H.*
Acalypha abortiva, *Hochst.*
fimbriata, *Hochst.*
Crozophora senegalensis, *S.*
Cephalocroton cordofanum
Croton lobatus, *L.* [*H.*
serratus, *Hochst.*
obliquifolius, *Vis.*
Ricinus africanus, *Mill.*
Phyllanthus, No. 89, =
Ph. Niruri, *L.*
Urinaria, *L.*
venosus, *Hochst.*
linoides, *H.*
B.—*Rutarieæ.*
Ruta tuberculata, *Forsk.*
var. obovata
Moringa aptera, *Gärt.*
Sapindaceæ.
A.—*Tribuleæ.*
Tribulus terrestris, *L.*
Fagonia arabica, *L.*
Zypophyllum simplex, *L.*
C.—*Paullinieæ.*
Cardiospermum Halicaca-
Malvaceæ. [bum
B.—*Malveæ.*
Sida alnifolia, *L.*
grewioides, *Gll. Perr.*
Kotschyi, *Hchst.*
althæifolia, *Sw.*
heterosperma, *Hchst.*
Abutilon graveolens, *W.A.*
ramosum, *Gll. Per.*
asiaticum, *Guill.Per.*
Pavonia Kotschyi, *Hchst.*
dictyocarpa, *Hochst.*
triloba, *Hochst.*
No. 395, =
P. heterophylla, *Hch*
triloba, *Guill.* var.?
triloba, *Hochst.*
No. 220
hermanioides, *Fenzl.*
heteroph. var.?
Dumreichera arabica, *H.St.*
var. major.
C.—*Hibisceæ.*

Lagunæa ternata, *Cav.*
Hibiscus cordatus, *Hochst.*
Trionum, *L.*
amblycarpus, *Hchst.*
Bammia, *Link*
Geraniaceæ.
A.—*Geranieæ.*
Monsonia senegalensis, *G.P.*
C.—*Byttnerieæ.*
Herrmannia arabica, *Hchst.*
Waltheria indica, *L.*
Melhania Kotschyi, *Hchst.*
Theaceæ.
B.—*Celastreæ.*
Celastrus senegalensis, *Lam*
Tiliaceæ.
Antichorus depressus, *L.*
Corchorus olitorius, *L.*
brachycarpus, *Gll.P.*
tridens, *L.*
alatus, *Hochst.*
Grewia No. 281, =
G. commutata, *Cand*
echinulata, *Caill.*

W. PAMPLIN, JUN.

(To be continued).

ART. CXIX.—*Analytical Notice of the 'Transactions of the Linnean Society of London,' vol.* xix. *pt.* 1. 1842.

III.—*Some Account of* Aucklandia, *a new Genus of* Compositæ, *believed to produce the* Costus *of Dioscorides. By* HUGH FALCONAR, *M.D., Superintendent of the Hon. East India Company's Botanic Garden at Saharunpore. Communicated by* J. F. ROYLE, *M.D., F.R.S. & L.S.*

Read November 17, 1840.

THE subject of this paper is nearly allied to our own Saussurea and Carlina, from the former of which genera it seems to differ chiefly in "the rays of its feathery pappus being disposed in two rows, and cohering by twos or threes at the base." It grows in great abundance on the damp open slopes of the mountains surrounding the valley of Cashmeer, at an elevation of from 8000 to 9000 feet above the sea-level, flowering in June and maturing its fruit in October. The plant has but a slender medical reputation among the native Cashmeerians, since it is chiefly employed by them to protect bales of shawls from the attacks of moths, its odour being very pungent, and well calculated to effect this; portions of the stem are also suspended from the necks of children, in order to protect them from the *evil eye,* and to expel worms.

The author observes that he has "frequently been asked, when in Cashmeer, where and for what purpose the immense quantities of the root, annually collected, could find a market." We give a brief summary of the commercial history of the plant, extracted from the details given in the paper. The roots are dug up in September and October; they are chopped into pieces from two to six inches long, and in this state are exported in vast quantities to the Punjab, whence the larger portion goes down to Bombay, where it is shipped for the Red Sea, the Persian Gulf and China; a portion finds its way into Hindoostan

Proper, whence it is taken to Calcutta, and is there bought up for the China market under the name of *Putchuk*.

One object of the author in this paper is to show that the root of Aucklandia is identical with the *Costus* of Dioscorides; and into the discussion of this question he enters pretty fully. The following are the proofs adduced in support of this opinion. 1. The correspondence of the root of Aucklandia with the descriptions of ancient authors. 2. The coincidence of names, this root being called *Koot* in Cashmeer, the Arabic *Koost* being given as synonymous. 3. At the present day the Chinese burn the root as an incense in their temples, and make use of it medicinally; the Costus was employed in the same way by the ancients. 4. The testimony of Persian authors that the Koost is not produced in Arabia, but is from the "borders of India." 5. The commercial history of the Cashmeerian root.

The author in conclusion makes some remarks on the probability that the Aucklandia, if cultivated, "would form a valuable addition to the wealth of the Hill people." He states that in consequence of the lively demand for the root in Cashmeer, there is seldom any surplus stock in hand; and the plant being a perennial, and requiring several years to mature its root, it is not likely the valley would yield any considerable increase on the quantity now collected, without ultimately reducing that quantity.

The plant is named by the author Aucklandia Costus, the generic name being given in honour of George Earl Auckland; it was met with during a journey to Cashmeer, undertaken under his Lordship's auspices while Governor-general of India. Full characters and a detailed description are given.

IV.—*Description of a new Genus of* Lineæ. *By* CHARLES C. BABINGTON, *Esq., M.A., F.L.S., F.G.S.*

Read January 19, 1841.

THE seeds of this interesting addition to the small order to which it belongs, were collected in the interior of New South Wales by Mr. Melluish, who sent them to the Cambridge Botanic Garden, where at the time the paper was written the plants raised from the seeds had flowered during three successive years.

The name given by the author is Cliococca tenuifolia; the generic name refers to the indehiscent nature of the single-seeded carpels, in which respect, and in an apparent tendency to the imperfect gynobasic structure of the Malvaceæ, the relationship between that family and the Lineæ is more fully evinced. The petals are imbricated in æstivation, and are not unguiculate; the coats of the carpels are also very thick, and the carpels themselves are perfectly closed, not even opening when they separate for the dissemination of the seed: in all which particulars the plant differs from the usual structure of Lineæ.

The paper contains full generic and specific characters, and is illustrated by a plate of details drawn by Mr. J. D. Sowerby.

V.—*On an edible Fungus from Tierra del Fuego, and an allied Chilian Species. By the Rev.* M. J. Berkeley, *M.A., F.L.S.*

Read March 16, 1841.

Mr. Darwin gives an account in his Researches of a production common on a species of beech in Tierra del Fuego, which is used by the natives as an article of food. The author's belief that these bodies were referrible to the Fungi, was confirmed by an inspection of the specimens preserved by Mr. Darwin, and by the perusal of that gentleman's original notes. With the aid of these materials he has been able to establish a new genus (which he has named Cyttaria), containing two well-defined species.

The following extracts from Mr. Darwin's rough memoranda relate to the first species — C. Darwinii.

> "In the beech forests the trees are much diseased; on the rough excrescences grow vast numbers of yellow balls. They are of the colour of the yolk of an egg, and vary in size from that of a bullet to that of a small apple; in shape they are globular, but a little produced towards the point of attachment. They grow both on the branches and stems in groups. When young they contain much fluid and are tasteless, but in their older and altered state they form a very essential article of food for the Fuegian. The boys collect them, and they are eaten uncooked with the fish. When we were in Good Success Bay in December, they were then young; in this state they are externally quite smooth, turgid, and of a bright colour, with no internal cavity. The external surface was marked with white spaces, as of a membrane covering a cell. Upon keeping one in a drawer, my attention was called, after some interval, by finding it become nearly dry, the whole surface honeycombed by regular cells, with the decided smell of a Fungus, and with a slightly sweet mucous taste. In this state I have found them during January and February (1833) over the whole country. Upon dividing one, the centre is found partly hollow and filled with brown fibrous matter; this evidently merely acts as a support to the elastic semitransparent ligamentous substance which forms the base and sides of the external cells. Some of these balls remain on the trees nearly the whole year; Captain Fitzroy has seen them in June."—p. 38.

Mr. Darwin found the same species at Port Famine in February, 1834; and again, under the date of June of the same year, he describes the appearance in an older state. He found them to be much infested with larvæ.

The second species—C. Berteröi—is a native of Chile, and is found upon Fagus obliqua. It appears to have been first described by Bertero, in a posthumous list of Fungi published in a journal called 'Mercurio Chileno,' a translation of which by Ruschenberger was given in Silliman's Journal, xxiii. 78. The following is Bertero's account.

"*Fagus obliqua*, Mirb., *Roble*, oak, a tree common in the high mountains. In the spring is formed on the branches of this tree a great number of whitish tubercles, the parenchyma of which is spongy, though sufficiently consistent at first. I thought it a galla or excrescence, produced by the wound of some insect, as is seen on some other trees in Europe, and I gave the matter but little attention; but two days afterwards they became unglued from the branch, and I observed with surprise that the skin was broken, and the whole surface covered with pentagonal tubes precisely similar to the alveoli of a honeycomb, at first full of a gelatinous substance of the colour of milk, which disappeared with the maturation; afterwards throwing out from these cavities with some force an impalpable powder, when it was touched, exactly as is observed in the Peziza vesiculosa. At the end of two days these bodies softened, lost their expulsive property, and rotted. It perhaps forms a new genus, approximating to the Sphæ- . Its vulgar name is *Dignénes*. Some persons eat them, but their insipid and styptic taste is disagreeable."—p, 39.

The following extract from Mr. Darwin's notes also refers to this species.

"Sept. 1834. On the hills near Nancagua and San Fernando, there are large woods of Roble, or the Chilian oak. I found on it a yellow fungus, very closely resembling the edible ones of the beech of Tierra del Fuego. Speaking from memory, the difference consists in these being paler coloured, but the inside of the cups of a darker orange. The greatest difference is, however, in the more irregular shape, in place of being spherical: they are also much larger. Many are three times as large as the largest of my Fuegian specimens. The footstalk appears longer; this is necessary from the roughness of the bark of the trees on which they grow. In the young state there is an internal cavity. They are occasionally eaten by the poor people. I observe that these are not infested with larvæ, like those of Tierra del Fuego."—Id.

Mr. Berkeley gives generic and specific characters, as well as a full description in English; and the illustrative plate is filled with anatomical details from his own drawings.

VII.—*On a reformed Character of the Genus* Cryptolepis, *Brown.* *By* HUGH FALCONER, M.D., *Superindendent of the Hon. East India Company's Botanic Garden at Saharunpore.* *Communicated by* J. F. ROYLE, M.D., F.R.S., F.L.S., &c.

Read June 15th, 1841.

THE genus Cryptolepis was established by Mr. Brown, who, in his Monograph published in the 'Memoirs of the Wernerian Society,' refers the genus to the Apocyneæ, placing it next to Apocynum: in this he has been followed all subsequent authors. But Dr. Falconer finds, on examination of specimens of Cryptolepis Buchanani, that it "has the whole of the accessory stigmatic apparatus of Asclepiadeæ, with granular pollen as typically developed as in Cryptostegia or any other of the Periplocæ, although in a less considerable degree of evolution; and that it must rank in that order along with them."

The author considers that the appendiculæ of the stigma, from their extreme minuteness must have eluded Mr. Brown's notice; two other points of difference lead the author to conclude that the plant examined by himself must have been different from Mr. Brown's. In the first place he does not find the five hypogynous scales mentioned in the generic definition; the same scales are wanting, so far as he has ascertained, in all the Periploceous genera allied to Cryptolepis, including even Decalepis of Wight and Arnott. Secondly, the species examined by the author has axillary instead of interpetiolar corymbs, an important character in the habit.

Many particulars relating to the reproductive organs are given, together with an amended generic character. The drawings for the illustrative plate were made by Kureem Buksh, a native artist.

IX. — *On the existence of Spiral Cells in the Seeds of* Acanthaceæ. *By* Mr. Richard Kippist, *Libr.L.S. Communicated by the Secretary.*

Read March 17th, 1840.

Botanists have long been aware of the existence of spiral vessels in the envelopes of the seeds of several families of plants. Mr. Brown detected them first in the pericarps of Casuarinæ, afterwards in the testa of some Orchideæ. They were observed by Lessing in Compositæ, by Horkel and Schleiden in Labiatæ, Polemoniaceæ and Hydrocharideæ; and in the 'Botanical Register' is given an account of their appearance in the seeds of Collomia. We believe that the merit of detecting these cells in the seeds of Acanthaceæ is due to Mr. Kippist, who has in this paper given an interesting detail of his researches. The following is the author's account of his discovery.

"My attention was first directed to this subject by witnessing the very beautiful appearance under the microscope of an Acanthaceous seed, forming part of a collection brought by Mr. Holroyd from Upper Egypt, and presented by him to Professor Don. It is of a lenticular form, covered, especially towards the margin, with whitish hairs, which are closely appressed to the surface, and glued together at their extremities, so as rather to resemble corrugations of the testa than distinct hairs; on being placed in water, however, they are set at liberty, and, expanding on all sides, are seen to consist of fascicles of long, cylindrical, transparent tubes, firmly cohering for about one third of their length, and presenting all the characters of spiral vessels. These fascicles usually contain from five to twenty tubes; each tube inclosing one, two, or occasionally even three, spiral fibres, which adhere closely to the membrane. The fibre may be sometimes seen to divide into two in the upper part of a tube, the branches usually continuing distinct; sometimes, however, after making a few turns, they again coalesce. Towards the free extremity of the tube the fibre is frequently broken up into a number of distinct rings; and in other cases the spire again becomes continuous, after having been interrupted by two or three such rings. In those portions of the tubes which adhere together, the fibre is completely reticulated; towards the extremity, the coils, though quite contiguous, are usually distinct, and readily separate by the expansion of the tube; in the intermediate parts they adhere more firmly together, being connected by slender ramifications of the main fibre. The expansion of the hairs in water is accompanied by a copious discharge of mucilage, which makes its escape by distending and finally ruptnring laterally the spiral tubes in which it is contained.

"The testa, which is distinctly visible in the spaces between the hairs, consists of nearly regular hexagonal cells, each containing an opake mass of grumous matter, which, not filling the entire cavity, leaves a wide transparent border. Cells similar to these, but more elongated and gradually passing into the form of tubes, immediately surround the base of each hair, which appears to be filled up by a conical mass formed of the transparent tubular portions."—p. 65.

Mr. Kippist was induced, by the peculiar appearance of these seeds, to examine those of other genera of the same natural family, with the view of ascertaining to what extent the tendency to develope spiral hairs might prevail, and whether that peculiarity might assist in characterizing genera. He finds that the presence of these cells is not universal in the Acanthaceæ, but has met with many examples, with "a considerable diversity in the structure and arrangement of the hairs which clothe the seeds." He describes the hairs of the seeds of a great number of species of Acanthaceæ, which appear to vary greatly in form and structure. We regret that our limits prevent us from selecting examples. The beautiful illustrations are from the author's own drawings.

X. *Description of a new genus of Plants from Brazil. By* J. Miers, *Esq. F.L.S*

Read March 2, 1841.

This is a minute diœcious plant found by Mr. Miers in the Organ mountains, Brazil, in February, 1838. Its texture is quite transparent, and the structure of its flowers very singular. Its position in the system is not accurately determined, but the author is disposed to place it near the Juncagineæ; in habit it resembles some Orchideæ. It is named by the author Triuris hyalina—the generic name referring to the three elongated processes of the perianth. The illustrations are from the pencil of the author.

ART. CXX.— *Varieties.*

249. *Note on Agaricus aimatochelis and A. deliciosus.* I have found in a wood near here a considerable quantity of Agaricus aimatochelis, which, when Berkeley's book was published, was not known as a native of England. My specimens had the red ring complete. Notwithstanding M. Roque's caution both I and my friends have eaten Agaricus deliciosus, and with impunity. It was broiled with pepper, salt and butter, and really was delicious. I have taken a moderate-sized one at a meal.— *George Sparkes; Bromley, Kent, November*, 1842.

250. *Note on Alaria esculenta.* In 1837 Mrs. Griffiths called my attention to the Alaria esculenta, and wished me to observe whether a new "frond was pushed out between the stem and the old one, as in Laminaria digitata and L saccharina." In consequence I attentively watched the plant during the three succeeding autumns, and as the result of my observations is interesting, and will serve to correct an error in Mr. Harvey's 'Manual of British Algæ,' where the Alaria is said to be annual, the following remarks may not be unacceptable to the readers of 'The Phytologist.' In spring the rocks in many parts of Mount's Bay are covered with the young fronds of the Alaria: the greater number of these are destroyed in the course of the summer; those more favourably situated remain, and throw out, near the top of the stipes, a few horizontal leaflets. In the autumn, between these and the base of the frond, the stipes becomes elongated, bearing a new frond, which, as in Laminaria, at first has the old one attached to its summit. Numerous leaflets are thrown out from a line on each side of the new portion of the stem, and the old leaflets fall off. There is a small interval between the insertions of the old and new leaflets; and although the marks of the former become nearly obliterated, yet by a careful examination they may still be detected, and the age of the plant ascertained. The stipes is therefore elongated whenever a new frond is formed, and this is more than once repeated, as I have frequently observed specimens which have had three sets of the horizontal leaflets.—*John Ralfs; Penzance, December* 14, 1842.

251. *New locality for Grateloupia filicina.* I avail myself of this opportunity to notice a Welch habitat for the rare Grateloupia filicina, which Mr. Harvey, in his 'Manual of British Algæ,' mentions as having been found (in this country) only on the shores of Devonshire and Cornwall. In September last I had the pleasure of finding it, rather plentifully, in shallow pools on the rocks in front of the Castle Hill at Aberystwith.—*Id.*

252. *Note on the poisonous effects of Conia.* Your correspondent Mr. Sparkes, from his remarks on the poisonous effects of the seeds (or rather *fruit*) of hemlock (Phytol. 459) does not appear to be acquainted with Dr. Christison's experiments on the subject. There can be no doubt of the poisonous nature of the fruit; Dr. C. found that it yielded a much larger quantity of the poisonous alkaloid—*conia*—than the leaves of the plant did. Conia, you are aware, is one of the most deadly poisons; a single drop put into the eye of a rabbit, killed it in nine minutes; three drops used in the same way, killed a strong cat in a minute and a half; five drops poured into the throat of a small dog, began to act in thirty seconds, and in as many more, motion and respiration had entirely ceased. Conia, when injected into a vein, killed a dog *instantaneously*. The poison has a local irritant effect, and destroys life by causing palsy of the muscles

of respiration, being in this respect the counterpart of strychnia, which kills by causing tonic contraction of the muscles of respiration. In both cases asphyxia is produced, but from different causes. The *green* fruit yields conia in large quantity. A full detail of Dr. Christison's experiments is given in the 'Transactions of the Royal Society of Edinburgh, vol. xiii. As to Lindley's remark, that the fruit of the Umbelliferæ is in no case dangerous, there surely must be some mistake. So far as I recollect he states, that while the leaves of the Umbelliferæ are always suspicious, the fruit is often aromatic. This remark holds good generally, but there are several important exceptions. Conia is easily decomposed by heat, and hence extracts of hemlock are often inactive. The *dried* leaves also, according to Geiger, contain no alkaloid. These facts will account for the variable effects produced by preparations of hemlock.—*J.H. Balfour;* 11, *West Regent St.*, *Glasgow*, *January* 4, 1843.

[The following is the passage referred to.—"The properties of this order require to be considered under two points of view: firstly, those of the vegetation; and, secondly, those of the fructification. The character of the former is, generally speaking, suspicious, and often poisonous in a high degree; as in the case of Hemlock, Fool's Parsley, and others, which are deadly poisons. * * *The fruit*, vulgarly called the *seed*, *is in no case dangerous*, and is usually a warm and agreeable aromatic, as Caraway, Coriander, Dill, Anise, &c."—Lindley's 'Natural System of Botany,' Ed. 2, p. 22. Dr. Lindley also states, after Fée, that the properties of Conium maculatum are greatly affected by climate; it being inert and eatable in Russia and the Crimea, although it is extremely dangerous in the south of Europe. It is also stated that for medicinal purposes hemlock should be collected in June, soon after flowering, its energy being much impaired if gathered later.—*Ed.*]

253. *Note on Hierochloe borealis*, (Phytol. 426 and 462). I may mention with regard to this beautiful and interesting grass, that I possess one or two very good specimens, which I purchased along with a few others, forming part of an old herbarium bearing the date of 1805, but unfortunately I could not ascertain the name of the former possessor. The handwriting is in an old style, and the following is a copy of the label:—"Holcus odoratus. Calla-glen, Angus-shire mountains; rarissimè!" No date. Possibly these may have belonged to Mr. G. Don, but not being acquainted with his handwriting, I cannot conjecture as to the fact. The word "mountains" would seem to show that "Kelly-glen" near Arbroath could not be the spot intended. I may remark that in my herbarium there are specimens of Potentilla tridentata and opaca, collected by Mr. G. Don.— *Thos. Edmonston, jun.; Baltasound, Shetland, January* 5, 1843.

254. *On the Hygrometric Qualities of the Setæ of Mosses.* I do not think it has been generally noticed that many mosses possess fully as much of this quality as Funaria hygrometrica. Dicranum cerviculatum, varium, falcatum and strumiferum; Orthotrichum crispum; Bryum turbinatum, capillare, julaceum and Zierii; Trichostomum polyphyllum, Tortula fallax and enervis, many Hypna, &c., I have observed to have this peculiarity to so great an extent, as to render it difficult to glue them to the paper on which they are preserved. Mosses which were dried under heavy pressure are comparatively destitute of this property. Thus Funaria hygrometrica, when the plants are picked and dried separately, has far less than when they had been pressed in tufts, and consequently the setæ little injured by it.—*Id.*

255. *Note on the mildness of the weather.* As an illustration of the mildness of the late season, the following notice of plants, which I gathered on the Derbyshire hills

beyond Mottram, on the 2nd of January of the present year, may prove interesting to some of the readers of 'The Phytologist.' Vaccinium Vitis-Idæa, both in flower and fruit, being the second time of its blossoms appearing within the last four months.—Empetrum nigrum, several specimens of which still bore the berries of last year; I did not see many with the flowers fully expanded, but if the weather had continued mild they would have been in full bloom in a week or two. Besides these I noticed in full flower about a dozen of the hardy spring weeds,— Stellaria media, Lamium purpureum, &c., and the following mosses were gathered in fructification.

Grimmia pulvinata
Gymnostomum truncatulum
Tortula muralis
Funaria hygrometrica
Polytrichum undulatum
Polytrichum piliferum
Dicranum taxifolium
heteromallum
Trichostomum lanuginosum
Hypnum plumosum
Hypnum ruscifolium
Bryum pyriforme
argenteum
hornum
punctatum

—*Joseph Sidebotham; Manchester, January* 10, 1843.

256. *Note on Onoclea sensibilis.* Perhaps it will be interesting to some of the readers of 'The Phytologist' to know that Onoclea sensibilis grows in an old stone-quarry near Warrington. This fern was found in the above locality about four years ago by John Roby, Esq., of Rochdale; the plant is plentiful and grows very luxuriantly. It was also found in the north of Yorkshire a short time ago, by Mr. Baines of York.—*Samuel Gibson; Hebden Bridge, January* 12, 1843.

257. *Note on the Poisonous Properties of the Fruit of Conium maculatum.* Professor Lindley is not the only botanist who has forgotten the qualities of the fruit of Conium maculatum, when speaking of the properties of the Umbelliferæ, for I find Dr. Willshire makes the same mistake. In his 'Principles of Botany,' he observes of the Umbelliferæ, that "the fruit is *innocuous;* often stimulating from the essential oil it contains." It is well known that the *leaves* of Conium maculatum possess a poisonous quality, which depends on the presence of a peculiar and highly poisonous principle, called *Conia.* This principle is found in greater abundance in the seeds than in the leaves, therefore we might presume them to be more poisonous; yet I know of no case on record of poisoning by the seeds, although many unpleasant effects have been produced when small quantities have been administered. Professor Christison, in making experiments upon animals, administered about thirty grains of an extract prepared from the full-grown seeds; it caused paralysis, convulsions and death, and this proves the fruit of Conium maculatum to possess very active and even poisonous properties. Indeed we should always be cautious how we employ the seeds of a poisonous plant, for although in some, as Papaver somniferum, they may be harmless, yet in others they possess all the active properties of the plant itself, as in the above example, to which I may also add Colchicum autumnale.—*Daniel Wheeler, M.R.C.S.L.; Reigate, January* 20, 1843.

258. *Correction of an error respecting the discovery of Statice tatarica near Portsmouth.* I regret having been the means, though inadvertently, of communicating an error to your pages, in stating Statice tatarica to have been discovered by myself near this place, (Phytol. 429). Having had some correspondence with Mr. Borrer on the subject, by whom I have been kindly furnished with specimens of the genuine S. tatarica from a foreign locality, and of S. Limonium, var. γ. (Smith), from Bosham, at the mouth of the Chichester river, I find that my plant is identical with the latter.—Its chief difference from the real S. tatarica consists in the absence of the winged stem, which forms a remarkable feature in that species, The very different appearance,

however, of my plant, from the normal form of S. Limonium, will I think admit of a reasonable doubt whether it is not a species distinct from that.—*W. L. Notcutt; Fareham, January* 25, 1843.

ART. CXXI. — *Proceedings of Societies.*

BOTANICAL SOCIETY OF EDINBURGH.

Thursday, January 12, 1843.—Dr. Douglas Maclagan in the chair. James Irving, Esq. was elected a resident fellow, and Baron Ludwig, — Arden Esq. and Wm. Caldwell Faure, Esq., Cape of Good Hope, non-resident fellows of the Society.

Mr. Goodsir then read two papers by John Ralfs, Esq., Penzance, on the *Diatomaceæ*. In these able papers the author described numerous species, and made some important observations on the structure and habits of these microscopic plants. Specimens were exhibited, and displayed under the microscope.

Mr. Brand read a description of two new species of British mosses, by Dr. Taylor, Dunkerron.

The next paper was entitled "Description of a new species of *Carex*, found near Hebden Bridge, Yorkshire." By C. C. Babington, Esq., M.A., F.L.S., &c., St. John's College, Cambridge. The author stated that it was now nearly two years since Mr. S. Gibson, of Hebden Bridge, had forwarded to him a *Carex* which he believed would prove to be a new species. He was now satisfied that is so, and has dedicated it to its discoverer (under the name of *Carex Gibsoni*), than whom no person can be more deserving of commemoration by means of a plant of this genus, to the careful study of which he has long and successfully applied himself.

"Remarks on the Scenery and Vegetation of Madeira." By Dr. Cleghorn, H.E.I.C.S. Dr. Cleghorn sailed from Spithead for India on the 15th of August, and reached Madeira on the 26th. His own narrative somewhat condensed is as follows.

In the evening of the 26th the vessel sailed into Funchal Bay. The sea was beautifully calm—glittering like a lake—the splash of the dolphin and the scream of the sea-bird being the only sounds. The stupendous mountains which rise behind Funchal, with their gigantic peaks, are very magnificent, and when viewed by moonlight, the general outline of these mountains resembles so much some scenes in the central Highlands, that I should have been impressed with the belief that I had been transported to Caledonia--had not the dense foliage of the plantain, the orange, and other trees fringing the coast, proved its vicinity to the tropics. From whatever quarter the island is approached, the aspect is singularly abrupt and picturesque. Next morning we went on shore. Much care is required in landing, as there is no quay, and the rocks are shelving. When the boat approaches the shore, on a signal being given, eight or ten boatmen yelling aloud, and tugging simultaneously, pull the skiff twenty yards up an inclined plane, so that passengers must *hold fast*, or they are capsized.

After a kind reception at the consul's residence, where are some splendid views of the neighbouring scenery, I sallied forth to see the lions of Funchal — the cathedral, nunneries, hospital and fortifications. Passing through the market, where were abundance of grapes, figs, dates, oranges, bananas, tomatas, &c., affording a delicious banquet to not a few of my shipmates, whose diet had consisted chiefly of salt junk, I afterwards sought the public garden or pleasure-ground, where the Portuguese were playing their national airs on the guitar and machetta, and returned to the consul's, carrying as trophies a noble specimen of *Coffea arabica*, and some ripe and unripe fruit of *Citrus Limonum* and *Limetta*.

I started early on the morning of the 27th to have a glimpse of the interior, in company with three shipmates. When entering Funchal Bay two evenings before, a striking edifice, apparently imbedded under a canopy of trellis-work and creepers, had attracted our attention. This conspicuous object, our guides now informed us, was "Nossa Senhora da Monte," or Mount Church, situated three and a half miles up the mountain, behind Funchal. As the land rises rapidly from the coast to the interior, in order to facilitate our progress, long iron spiculæ were appended to the posterior part of our horses' shoes, presenting in an exaggerated degree the appearance of what we call in Scotland *well frosted*. This is necessary, for the angle of inclination of some roads above Funchal is certainly not less than the ascent of Arthur's Seat from the Hunter's Bog. These roads, however, though ill-suited for the progression of the tourist, are well adapted for the descent of the hogsheads of Madeira from the wine-presses above the town. They are paved with small pebbles (nearly equal in size), taken from the ravines and water-courses; and in the interstices between these stones the spiculæ mentioned are securely fixed at each step of the horse. We could not ride two abreast, as the road was only six feet broad in some places; and, speaking for myself, being mounted on a particularly fiery Pegasus, the occasional passing of a sledge, drawn by a couple of pigmy bullocks, was attended with some difficulty.

During the first part of the excursion we traversed a region of terraced vineyards, which are arranged in a singularly beautiful manner, the vines being carried on trellices over the roads, and, occasionally, this refreshing canopy is continued over some acres of rich soil—forming a lovely covering of leaves and fruit. These shady avenues are an agreeable protection from the rays of the sun, and being arched overhead, have the appearance of tunnels: in them the peasants are engaged in vine-dressing during the day—the children sport in the evening—and dogs keep watch by night.

The *Arundo donax*, which attains a height of twenty feet, is cultivated extensively for supporting the vines, and a variety of other purposes.

The soil in the vicinity of Funchal is exceedingly rich, consisting of dark vegetable mould, mixed with the debris of volcanic rock, or of beds of stiff red clay. The latter produces the best vineyards; and a bed of this description, with traces of iron ore, extending to the depth of thirty feet, yielded as fine produce as any that we passed in the island.

As we rose from this lower region, where the mountain was clothed with vines and figs, and where flocks of canaries of a lively green flew around, we plodded on through orange bowers and festoons of fragrant jasmine (*Jasminum odoratissimum*). The proud sunflower here overtopped the modest *Heliotrope*. There were patches of *Coffea arabica* (in cultivation), *Cucurbitaceæ* in great abundance,— gourds, melons, pumpkins and cucumbers. We noticed, surrounding a merchant's villa, a stout hedge of *Fuchsiæ*, and some scattered specimens of *Passiflora edulis* and *quadrangularis*. The *Cactaceæ*, singular in appearance and various in habit, showed their spiny heads and handsome petals, their roots being sometimes firmly secured in the crevices of the granite. Here were plants of which we have no example in the north. The vegetation was of a different character from anything I had seen.

It was evident, however, that many of the rare flowers were not indigenous — but it was not easy to distinguish those that had been introduced, as the whole country at this elevation had the appearance of an ornamental garden.

There was a scene of life and motion amongst the herbage, of which our Scottish forests afford no idea — the leaves of some shrubs being covered with brilliant beetles; the abundant foliage giving plentiful nourishment to the swarms of insect tribes. — Larks in great numbers were carolling merrily, and kestrils hovering on the mountain side.

We dismounted to examine the pictures and architecture of the Mount Church, dedicated to Santa Maria, and from our now elevated position enjoyed a truly magnificent view (the platform and gateway were mantled with luxuriant shoots of *Lonicera* and *Clematis*). Below us lay the town and bay of Funchal; eastward, the singular promontory which we had rounded on entering the bay, and which is known to visitors by the name of the Brazen Nose; and to the west, beyond the tract of vineyards, is an extensive race-course, with a range of steep craggy rocks jutting out into the sea.

In pursuing the ascent, we rode along a sharp ridge leading to the Caldeira, or highest peak of the island, on which is a well-supplied ice-house. This is the range of the Pines and Spanish Chesnuts, and the timber here was not contemptible.

Closely adjoining, at a greater elevation, were many species chiefly of the *Labiatæ* and *Caryophylleæ*. We were now on either side the yawning depth of ravines, where, after a few hours' rain, most formidable torrents rush down the adjacent valley to the ocean. There were some remarkably fine specimens of *Gymnogramma Lowei* (named in honour of the resident English clergyman, a scientific naturalist) amongst the wet rocks of a narrow cleft, through which we passed in crossing a watercourse; of these specimens, some were singular varieties.

Sundry were the risks, as we slowly jogged down the mountain, keeping tight the bridle-reins, and the horses occasionally sliding on their haunches. Thus terminated a visit to Madeira, which the novelty of the scenes—the hospitality of the British consul and Portuguese merchants, and the kind attention of the house-surgeon of the hospital (an Edinburgh graduate), had rendered one of great pleasure and gratification.

BOTANICAL SOCIETY OF LONDON.

November 29, 1842.—Sixth Anniversary Meeting; J. E. Gray, Esq., F.R.S., President, in the chair. From the Report of the Council it appeared that 13 new members had been elected since the last anniversary, and that the Society consisted of 152 members.

The donations to the Library had been very considerable.

The Report of the Herbarium Committee was read, and stated that the British herbarium had been in reference order for some time, and the Committee were using their best exertions to obtain the Society's desiderata, which had lately been considerably diminished by the receipt of many rare plants from Mr. G. Francis and Mr. S. P. Woodward, the latter gentleman having presented a large series of British mints, collected by the late Mr. Sole of Bath.

Many valuable parcels of British and foreign plants had been received, and the return parcels sent to the members had given the greatest satisfaction, in many instances the return parcel having been sent within ten days after the receipt of the parcel from the member. The Committee anticipate that in future the return parcel will regularly be sent within ten days after the receipt of a parcel from any contributor.

Amongst the most valuable parcels received during the past season, may be mentioned a large collection of British plants from Mr. Hewett C. Watson, comprising upwards of 5500 specimens; also numerous Jersey plants from Mr. G. H. K. Thwaites. A large collection of Shropshire *Rubi* from Mr. H. Bidwell; 300 specimens of *Bupleurum falcatum* collected in Essex, from Mr. E. Doubleday; and numerous specimens of *Lastræa cristata*, collected in Norfolk by Mr. B. D. Wardale, and presented by that gentleman.

The Committee pointed out the necessity of members sending two labels with each specimen, one for permanent preservation in the label-book, which the Committee anticipate will, in the course of a few years, be valuable as an authentic register of the localities of plants, and prove highly serviceable in showing the geographical distribution of the species. Many interesting monstrosities had been received from several of the members; and the Committee impressed upon the members the importance of collecting monstrosities, and their value in a public collection.

Local Herbaria.—The Society had received from Mr. Edwin Lees a herbarium of the Malvern Hills, including the Cryptogamic plants; accompanied with many valuable remarks upon the geographical distribution of the plants of the neighbourhood, together with the geological character of the neighbouring hills: and the Committee hope next year to be able to report the receipt of other local herbaria now in course of formation for the Society.

Cryptogamous Plants.—The collection of mosses, lichens and Algæ received during the past season, had been more considerable than during any former period; and the first three volumes of 'Algæ Danmonienses,' and part 1 of Berkeley's 'British Fungi,' had been presented to the Society by Mrs. Margaret Stovin. Mr. S. P. Woodward is now actively engaged in arranging the whole Cryptogamic collection.

Foreign Plants.—These form a valuable part of the Society's collection, and comprise plants from North and South America, British Guiana, New South Wales, Cape of Good Hope, Sierra Leone, China, and various other parts of the world.

Among the more interesting plants in this collection may be mentioned about 350 species collected by Mr. R. H. Schomburgk in British Guiana, and presented by him; 250 species collected in Natal, South Africa, by Dr. F. Krauss; many thousand specimens collected in North America by Dr. Gavin Watson, and presented by him; and numerous species from Dr. C. F. S. De Martius, collected by him in South America.

Museum. — Numerous specimens of sections of woods, seed-vessels, barks, and several large collections of seeds, had been received, many of them purchased at the sale of the botanical museum of the late A. B. Lambert, Esq., and presented by some of the members.

The Reports of the Council and Herbarium-committee were unanimously adopted, and a ballot then took place for the Council for the ensuing year, when the chairman was re-elected President, and he nominated J. G. Children Esq., F.R.S., and Hewett C. Watson, Esq., F.L.S., Vice-Presidents; Messrs. E. Doubleday, G. Francis, and J. G. Mitchell were elected new members of the Council, in the room of Dr. Meeson, Messrs. G. Cooper and W. H. White, who retire from the Council in accordance with the Rules of the Society. Mr. J. Reynolds, Mr. G. E. Dennes and Mr. T. Sansom were respectively re-elected Treasuror, Secretary and Librarian.—*G. E. D.*